

**Office Action Summary**

Application No.

09/676,487

Applicant(s)

MATSUMOTO ET AL.

Examiner

Yvette C. Thornton

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 October 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3-20 is/are pending in the application.
- 4a) Of the above claim(s) 3-8 and 11-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 9 and 10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

Art Unit: 1752

### DETAILED ACTION

This is written in reference to application number 09/676487 filed on October 2, 2000.

#### *Response to Amendment*

1. Claim 2 has been cancelled. Claim 1 and 3-20 are currently pending. Claims 3-8 and 11-20 are drawn to non-elected inventions.
2. The amendment to the claims is sufficient to overcome the rejection of the claims over 35 USC 112 1<sup>st</sup> and 2<sup>nd</sup> paragraphs as set forth in the previous action.
3. The cancellation of claim 2 is sufficient to overcome the claim objection as set forth in the previous action.

#### *Claim Rejections - 35 USC § 112*

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1 and 9-10 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. While the applicant has support for the specific compounds disclosed in the specification as compounds 9, 30, 35, 23 and 62-65, applicant does not have support for the general formulae 6 and 7 as set forth in instant claim 1.

*Claim Rejections - 35 USC § 103*

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cunningham et al. (US 6011180A) in view of the applicant's own disclosure and Kawamura

et al. (US 5061605 A). Cunningham teaches a compound of given formula I:  $\left[ \begin{array}{c} R_1 \\ | \\ R_4 - C - R_2 \\ | \\ R_3 \end{array} \right]^+ G^-$

wherein  $R_1$  is  $C_{1-20}$  alkyl, or an unsubstituted or substituted phenyl group;  $R_{2,4}$  are independently of one another an unsubstituted or substituted phenyl or biphenyl group; and  $G^+$  is a radical which is able to form a positive ion (abstract). The examiner is of the position that the taught formula (I) meets the limitations of claimed formula (A). The taught invention provides for a composition comprising (a) at least one ethylenically unsaturated compound; (b) at least one compound containing an acidic group which may also be present in component (a); (c) at least one photoinitiator of the given formula (I); and (d) if desired, at least one co-initiator (c. 3, l. 5-16). If the compounds of formula (I) do not contain a dye as counterion and at the same time the corresponding borate is not sufficiently absorptive, then it is expedient for the photopolymerization process to add at least one co-initiator or electron acceptor compound (d) to the composition (c. 8, l. 1-5). The unsaturated compounds suitable as component (a) include esters of ethylenically unsaturated carboxylic acids and

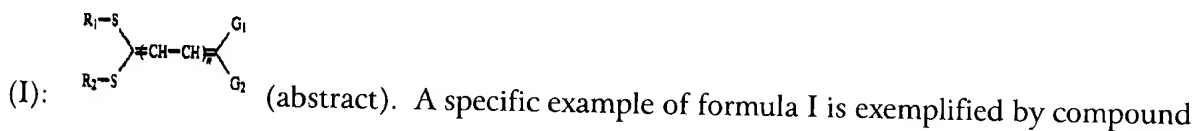
polyols or polyepoxides and polymers having ethylenically unsaturated groups in the chain or in side group. Examples of unsaturated carboxylic acids are acrylic acid, methacrylic acid and cinnamic acid (c. 17, l. 64-c. 18, l. 10). It is the examiner's position that the taught ethylenically unsaturated compounds (i.e., methacrylic acid and acrylic acid) meet the limitations of the instant claims. Applicant's own disclosure on page 93, line 4-page 95 discloses that methacrylic acid and acrylic acid are suitable examples of compounds having in the molecule an electron accepting group and a polymerizable group.

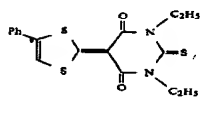
Cunningham teaches that compounds suitable as component (b) are those, which are acids or carry an acidic group, or are attached as ligands or counter ions. Dyes such as methyl red hydrochloride and ethyl orange and acid yellow are also suitable as compounds of component (b). The said component may likewise consist of pigments, fillers or inorganic auxiliaries, which contain acidic groups (c. 19, l. 51-c. 20, l. 60). It is the examiner's position that the use of the taught dyes constitutes a color former material as set forth in instant claim 9.

The compounds according to the invention finds application for the production of one or more layered material for the image recording or image reproduction which may be unichromatic or polychromatic. Furthermore, the materials are suitable for color proofing systems. In this technology formulations containing microcapsules can be applied and for the image production the reaction can be followed by a thermal treatment (c. 28, l. 57-67).

Cunningham however fails to teach a compound having the structure of claimed formula 6 or 7. Kawamura (US '605) teaches a photopolymerization composition comprising an addition polymerizable compound having at least one ethylenically

unsaturated double bond and a photopolymerization initiator represented by general formula



number 19 having the structure . Kawamura teaches that the said structures show high sensitivity to light rays of long wavelengths and serve as photoinitiators, which have good storage stability (c. 1, l. 49-63). One of ordinary skill in the art would have been motivated by the teachings of Kawamura to use compounds of general formula (I), specifically compound 19 as the co-initiator of Cunningham in order to increase the sensitivity of the composition to light rays of long wavelengths. It is the examiner's position the compound 19 meets the limitations of claimed formula 6.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cunningham et al. (US 6011180A) in view of the applicant's own disclosure and Kawamura et al. (US 5061605 A) as applied to claims 1 and 9 above, and further in view of Gottschalk (US 4772541A). One of ordinary skill would have been motivated by the teachings of Cunningham, as discussed above, to use the taught composition to make a multi-layered polychromatic material containing microcapsules.

The background teachings of Gottschalk (US 4772541A) disclose systems that are known, which comprise photopolymerizable dispersion on a support in three separate layers. One layer which contains a yellow color former and is sensitive to blue light; a second layer which contains a magenta color former and is sensitive to green light; and a third layer which contains a cyan color former and is sensitive to red light (c. 2, l. 18-42). It would have been

obvious to one of ordinary skill to make the said multilayer polychromatic microcapsulate systems contain three photopolymerizable dispersions provided on a support in three separate layers as it is well known in the art.

### *Response to Arguments*

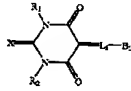
9. Applicant's arguments with respect to claims 1 and 9-10 have been considered but are of little moment in view of the new ground(s) of rejection.

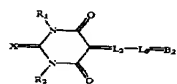
### *Conclusion*

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

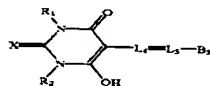
- Okubo et al. (US 5965324 A) teaches a light sensitive composition comprising a radical

generating agent and a dye represented by formula (1), (2) or (3):

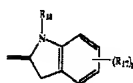
 (1),



(2) and



(3) (abstract). B2 of the said formulae can be



, which is close to the claimed formula 7. Okubo however fails to teach and/or suggest a dimethyl substituted heterocyclic ring.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

12. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action.

In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yvette C. Thornton whose telephone number is 703-305-0589. The examiner can normally be reached on Monday-Thursday 8-6:30.

14. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet C. Baxter can be reached on 703-308-2303. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

15. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1193.

**\*\*Please note that the examiner has recently changed her name from "Clarke" to "Thornton".\*\***

yct  
December 10, 2002

  
JANET BAXTER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700